

ABSTRACT

An abrasivejet cutting head is disclosed for use in an abrasivejet cutting system. The cutting head includes a replaceable generally cylindrical insert member having a fluid passageway aligned with the passageway of the housing. A waterjet-forming orifice member is supported within the insert in axial alignment with the abrasivejet discharge nozzle located at the downstream end of the cutting head. The insert is locked into the cutting head by the sleeve of an abrasive-carrying conduit, and provides the mixing region in which the abrasive is entrained into the waterjet. By making the jet-forming orifice and mixing region an integral unit, the mixing chamber is conveniently changed every time the wear in the jet-forming orifice requires an orifice change to maintain high cutting efficiency, while adding virtually no cost in additional components since it merely requires a slightly elongated insert than would otherwise be necessary. In addition, the relatively expensive abrasivejet nozzle, which is typically the longest lasting component of the three, need not be replaced until necessary and, when necessary, is easily removed and replaced in co-axial alignment with the orifice. Lastly, the arrangement results in self-alignment of the waterjet-forming orifice, the mixing region and the abrasivejet nozzle.